

Digital News Production Site Preparation Guide

NEWSEDIT
DIGITAL NEWS PRODUCTION

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This guide provides information about site requirements for installing Digital News Production (DNP) systems. Electrical and physical specifications on the system components are also included. Connector information as well as pin assignments are given in case customized cabling is required.



DNP System Layouts

This section provides a typical system layout. Diagrams of the Vibrint system components identify the rear interface connectors. The exact orientation of the equipment depends on:

- Available space in the work area — This document provides the dimensions of the equipment, however, Grass Valley Group recommends additional space for access and ventilation.
- Length of the cables — Cables with excessive length clutters the area and is not recommended.
- User preference — Whether the monitor, video deck, and system are on the left or the right side is up to the user. The order from top to bottom in the rack can also differ to to accessibility of the connectors and viewing indicators.

Digital News Production Layout (NewsEdit specific)

Figure 1 shows all standard and optional components. Set up your system components in positions that give you easy access to them.

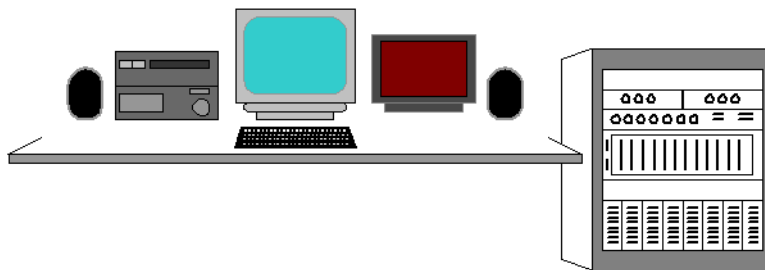


Figure 1. *DNP System Components (example is NewsEdit)*

Digital News Production Layout (NewsEdit specific)

The following is a list of supplied DNP Server system features:

- 20 gigabyte IDE hard drive with NTFS format for operating system
- 3.5 inch floppy drive; reads and writes to 1.44 MB diskettes
- CD-ROM reader; required for installing software
- Built-in TCP/IP compatible Ethernet LAN connection
- Windows2000 operating system
- Breakout I/O panel (2 options: Pro Analog or Pro D&A)
- Standard keyboard and PS/2 mouse
- Two serial ports
- DNP software

The following is a list of optional DNP Server system features:

- High resolution 17 inch VGA monitor
- Fibre Channel network adapter card
- Gigabit Ethernet adapter card
- Time-code Reader adapter card (FeedClip only)
- 9, 18, 36, 72 and 180 gigabyte removable SCSI media drives
- Additional DNP software
- Fibre Channel RAID3 protection storage



Digital News Production (DNP) Workgroup Layout

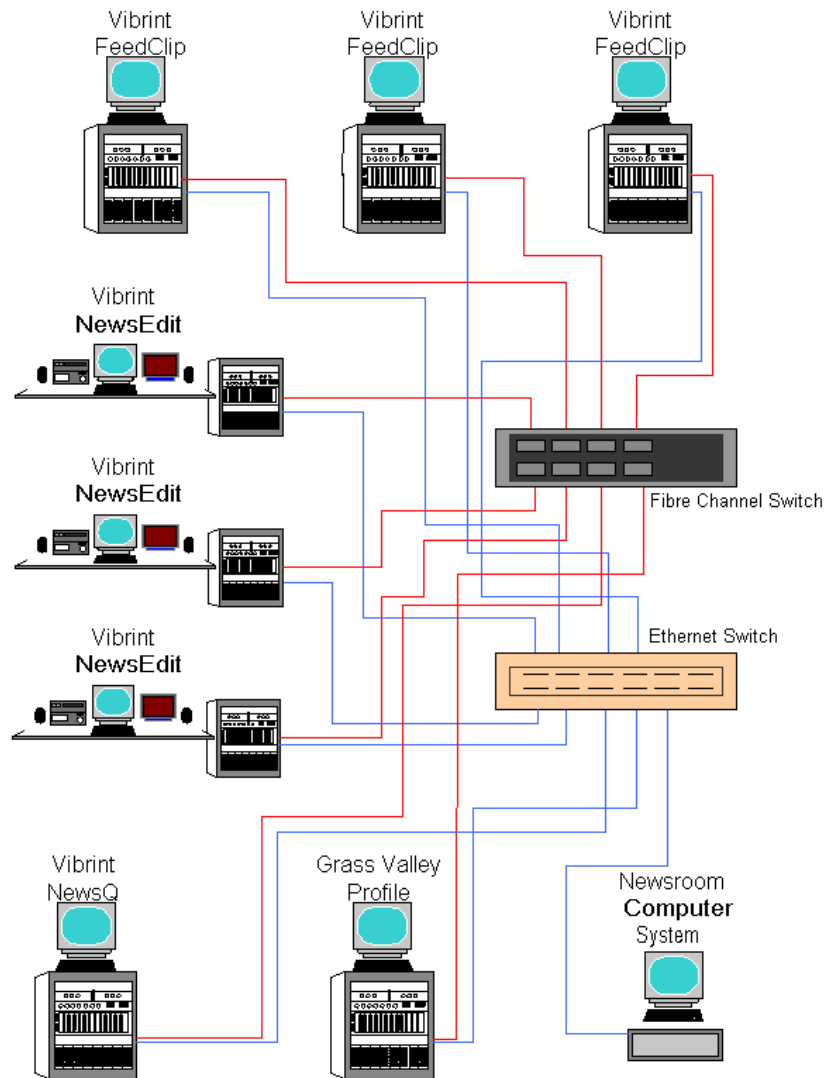


Figure 2. *DNP Workgroup Layout*

DNP Server Connectors

The DNP Server is a computer with specific peripheral hardware for converting the incoming video and audio, analog or digital signals into digital format for storage. The Windows2000 operating system and DNP application are preinstalled on the DNP Server.

Figure 3 and Figure 4 identifies the rack mount version connectors and parts. Table 1 provides a description of each connector.

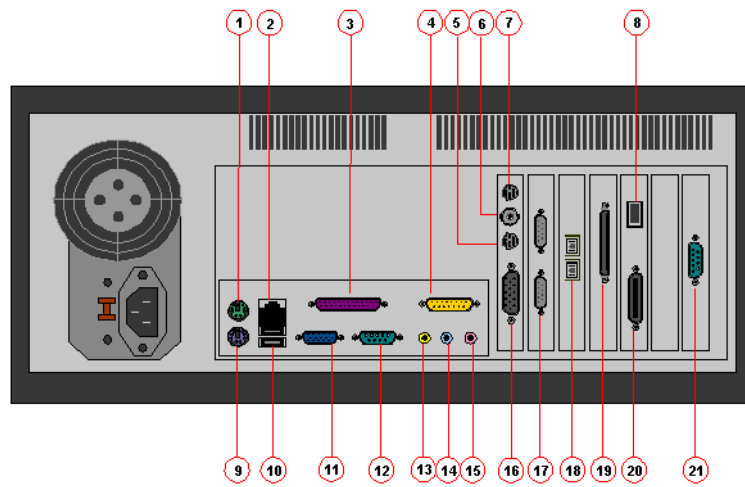


Figure 3. DNP Server Back



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Table 1. DNP Server Connections

Number	Connector	Function
1	PS/2 style	PS/2 style connector for Mouse
2	RJ-45	Ethernet Port Connector
3	DB-25	Not used
4	DB-15	Not used
5	S-Video In	Video Input for VGA video
6	RCA	Not used
7	S-Video Out	Not used
8	1394 Firewire	Not used
9	PS/2 style	PS/2 style connector for Keyboard
10	USB	Disabled
11	DB-15 HD	VGA port (only used for troubleshooting)
12	DB-9 Male	COM1 port used for external GPI
13	RCA Mini	Computer audio line in (not used)
14	RCA Mini	Computer audio line out (not used)
15	RCA Mini	Computer Mic (not used)
16	DB-15 HD	VGA port used for external UI monitor
17	DB-9 Male	RS-422 Remote Control
18	Dual SC type	Fibre Channel connectors
19	50 pin SCSI	SCSI connector for external storage devices
20	Digital Tether	Connection to I/O Breakout panel
21	DB-9 Male	COM2 port used for external GPI

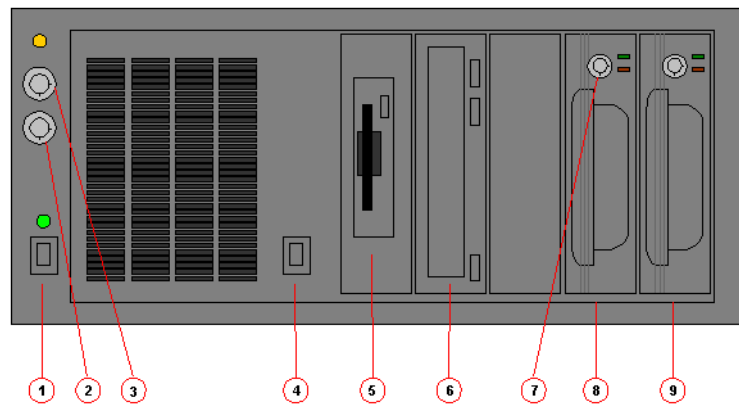


Figure 4. *DNP Server Front*

Table 2. *DNP Server Connections*

Number	Function
1	Main power switch
2	Panel door lock
3	Keyboard lock
4	Reset power switch
5	1.4 meg Floppy disk drive
6	CD-Rom drive
7	Media drive lock
8	Media drive carriage #1
9	Media drive carriage #2

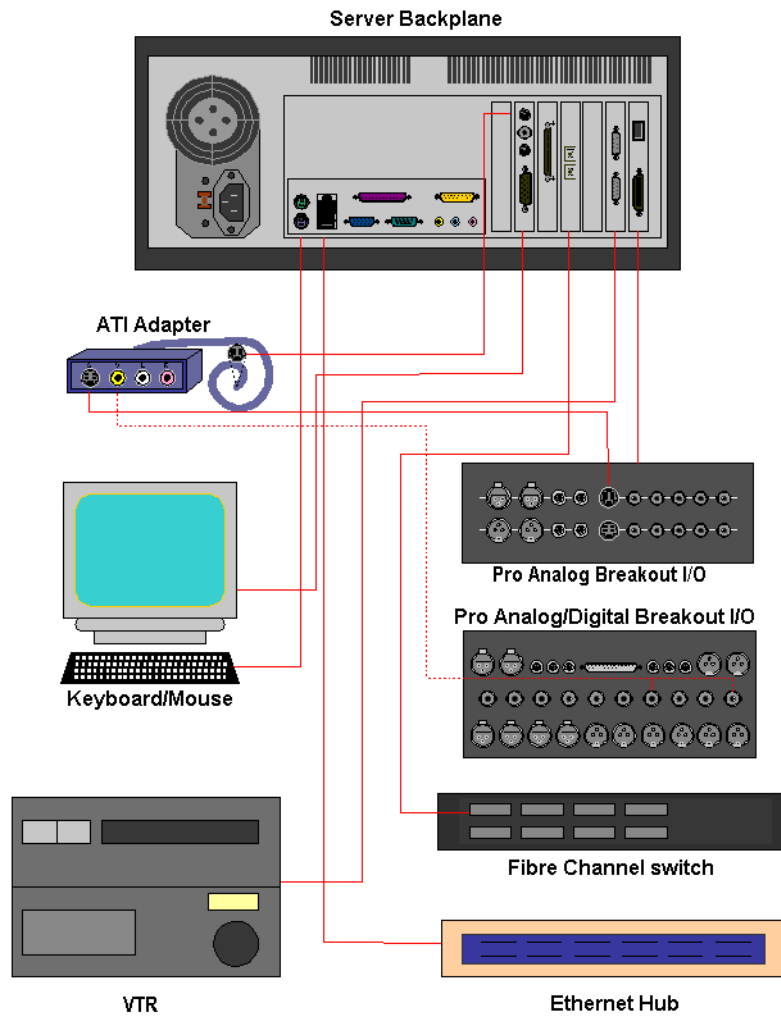


Figure 5. *DNP Server System connections*

External I/O Connections

The DNP Server comes with an I/O Breakout Box (BOB) to provide video and audio input and output. Currently there are 2 different types of I/O panel configurations. Figure 6 identifies the connections for the Pro Analog and Figure 7 identifies connections for the Pro Analog/Digital combination panel.

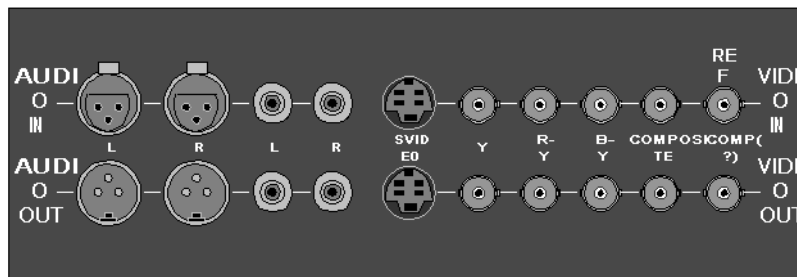


Figure 6. Pro Analog Breakout Box

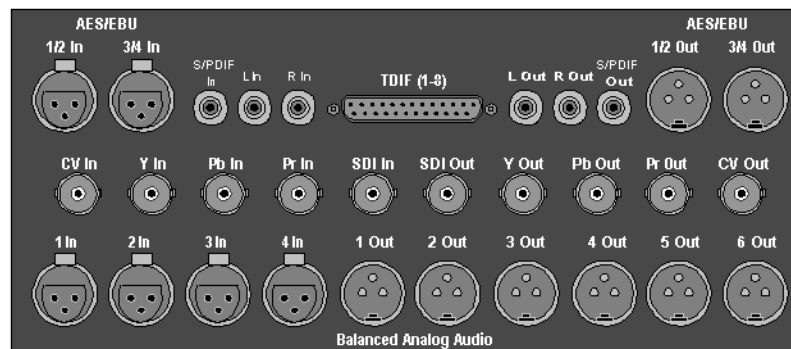


Figure 7. Pro Analog/Digital Breakout Box

Note: On the backside of the Pro Analog/Digital breakout panel, is a reference input for genlocking the DNP system.



ATI All-In-Wonder Breakout Module

The DNP is equipped with an ATI All-In-Wonder Video Graphics Adapter. Along with this adapter is a small purple breakout module for getting low-resolution video display on the user interface. The module connector inputs are S-Video, RCA video and RCA audio. When using the Pro Analog I/O, you need to connect the S-Video output from the I/O panel to the S-Video input on the ATI module. When using the Pro Analog/Digital I/O, you need to connect the composite video output of the I/O panel to the RCA video input on the ATI module. Alternately, you can connect the video input of the ATI module to the Component Y output of the I/O panel to see video. In any case, when you open the DNP program, you need to set the VGA input selection in order to properly see a video connection on the user interface. Figure 8 shows the ATI breakout module.

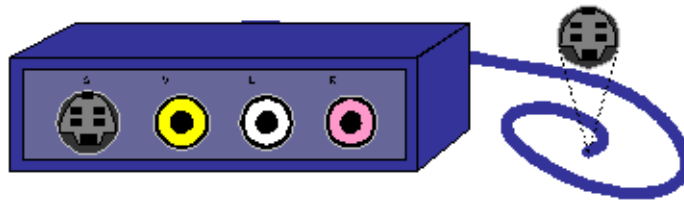


Figure 8. *ATI Breakout Module*

Cabling Guidelines

The customer is responsible for all video, audio, network and serial cables. Lengths are determined by the customer's needs. A floor plan of the facility, with the locations marked where the users and equipment are located, will help determine cable requirements. Table 3 describes all cables typically needed, as well as cable length limitations and recommendations.

- Use all GVG supplied cables delivered with the DNP system. All supplied cables are tested and qualified for GVG broadcast system configurations.
- The monitors should be within 6 feet of the DNP server. VGA cable extensions may be used although greater distances can degrade images displayed on the monitors
- The keyboard and mouse should be within 6 feet of the DNP server. Keyboard and mouse extensions may be used for greater distances.
- The video and audio breakout panel should be within 10 feet of the DNP server.
- The VTR should be within 15 feet of the DNP server for a standard RS-422 length cable. An extension cable can be added for greater distances.
- The length of a fibre-optic cable between a DNP server and a fibre-channel switch should be 1650 feet (500 meters) when using a 50-micron cable.



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Table 3. System Cable descriptions - Grass Valley Supplied

Cable Description	Length	Connects
Standard power cords	Up to 6 ft. (1.8m)	All physical hardware with designated power supply
Keyboard cable	Up to 6 ft. (1.8m) (Quality PS/2 extender cables can be used)	Keyboard to Server
Mouse cable	Up to 6 ft. (1.8m) (Quality PS/2 extender cables can be used)	Mouse to Server
Digital tether data cable	15 ft. (1.8m)	I/O Breakout box to video board on Server
Purple ATI I/O cable	8 ft. (1.8) standard	ATI I/O to mini din connection on graphics card
S-Video cable	6 ft. (1.8m)	S-Video on Analog I/O box to ATI I/O

Table 4. System Cable descriptions - Customer Supplied

Cable Description	Length	Connects
Fibre optic	50-micron, SC Multimode type, up to 1650 ft. (500m)	Fibre channel switch to server fibre port
RJ-45 Cat5 Ethernet	Customer desired	Ethernet hub or switch to Server ethernet port
Remote serial	Up to 15 ft. (4.6m) (Quality RS422 extension module can be used)	Remote control from VTR to RS-422 card on server
BNC video	8 ft.	Digital I/O composite or component Y to ATI I/O
BNC video reference	Customer desired	Reference on I/O Panel
BNC video	Customer desired	Customer equipment to I/O panel
BNC timecode	Customer desired	House timecode clock to TCR card
XLR Audio	Customer desired	Customer supplied equipment to I/O panel

Audio Mixer for NewsEdit

As an option, a mixer can be added to enhance audio capabilities. This will allow you to set up several inputs into the editor. Table 5 is a suggested configuration on the setup of a mixer and NewsEdit. Examples used in the table are based on the Mackie 1402VLZPro.

Table 5. *Mixer Setup (Optional)^a*

Input	From	To	Cable type
Analog Audio with a Mixer	VTR Channel 1 output	Mixer channel 1 line IN	XLR-female to 1/4"-male
	VTR Channel 2 output	Mixer channel 2 line IN	XLR-female to 1/4"-male
	Main mixer out left channel	Breakout panel balanced IN left channel	XLR-female to XLR-male
	Main mixer out right channel	Breakout panel balanced IN right channel	XLR-female to XLR-male
	Breakout panel Balanced Left Out	VTR Channel 1 input	XLR-male to XLR-male
	Breakout panel Balanced Right Out	VTR Channel 2 input	XLR-male to XLR-male
	Breakout panel Unbalanced Left Out	Left desktop speaker	RCA-male to XLR-male or 1/4" male
	Breakout panel Unbalanced Right Out	Right desktop speaker	RCA-male to XLR-male or 1/4" male



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Table 5. Mixer Setup (Optional)^a

Input	From	To	Cable type
Analog Audio without a Mixer	VTR Channel 1 output	Breakout panel balanced IN left channel	XLR-female to XLR-male
	VTR Channel 2 output	Breakout panel balanced IN right channel	XLR-female to XLR-male
	Breakout panel Balanced Left Out	VTR Channel 1 input	XLR-male to XLR-female
	Breakout panel Balanced Right Out	VTR Channel 2 input	XLR-male to XLR-female
	Breakout panel Unbalanced Left Out	Left desktop speaker	RCA-male to XLR-male or 1/4" male
	Breakout panel Unbalanced Right Out	Right desktop speaker	RCA-male to XLR-male or 1/4" male
Digital Audio	VTR AES/EBU Channels 1&2 Output	Breakout panel AES/EBU Channels 1&2 Input	XLR-male to XLR-male
	Breakout panel AES/EBU Channels 1&2 Output	VTR AES/EBU Channels 1&2 Input	XLR-male to XLR-female
	Breakout panel Unbalanced Left Out	Left desktop speaker	RCA-male to XLR-male or 1/4" male
	Breakout panel Unbalanced Right Out	Right desktop speaker	RCA-male to XLR-male or 1/4" male
Video	VTR-SDI Output	Breakout panel SDI Input	Single BNC-BNC
	Breakout panel SDI Output	VTR SDI Input	Single BNC-BNC
	VTR Composite Output	Breakout panel Composite Input	Single BNC-BNC
	Breakout panel Composite Output	VTR Composite Input	Single BNC-BNC
	VTR Component Output	Breakout panel Component Input	Tri BNC-BNC harness
	Breakout panel Component Output	VTR Component Output	Tri BNC-BNC harness

Component Weights and Dimensions

Table 5. Mixer Setup (Optional)^a

Input	From	To	Cable type
Ethernet & Fibre	Server Chassis	Ethernet Hub/Switch	RJ45-RJ45
	Server Chassis	Fibre Channel Switch	Dual SC-Dual SC

a. For optimum performance and a clean cabling environment, it is recommended to keep all cable lengths between 6-8 feet.

Component Weights and Dimensions

Table 6 describes some additional information regarding each DNP system's physical specifications including weight and dimensions.

Table 6. DNP Physical Specifications

Component	Rack Mount	Rack Units	Height x Width x Depth	Weight
DNP Server	Yes	4	5.87 x 17 x 20 in	40 lbs
Analog Breakout Box	Yes	2	3.5 x 12 x 3.8 in	2.5 lbs
D&A Breakout Box	Yes	3	3.7 x 13.68 x 4.25 in	3.5 lbs
17" Monitor (optional)	No	N/A	16 x 16 x 17 in	38 lbs
Mackie 1402VLZ Pro (optional)	Yes	8	2.9 x 14 x 12.9 in	9.5 lbs
Speakers (optional)	No	N/A	7.25 x 4.67 x 6.58 in	3.7 lbs
Brocade Silkworm 2400 (optional 8 port)	Yes	1	1.71 x 16.87 x 17.72 in	17 lbs (dual power supply)
Brocade Silkworm 2800 (optional 16 port)	Yes	2	3.5 x 16.87 x 17.72 in	28.5 lbs (dual power supply)
Netgear FS516 Ethernet Switch (optional 16 port)	Yes	1	1.7 x 13 x 8 in	4.7 lbs



Site Requirements

This section describes the various site requirements for installing the NewsRoomSuite.

Power Requirements

Grass Valley Group highly recommends using a surge protector and an uninterruptible power supply (UPS). If the computers lose power even for a moment, the entire system will stop functioning. There must be a 20 A, 110 to 120 V alternating current, 60 Hz or 10 A, 220 to 224 V alternating current, 50 Hz circuit breaker and an isolated ground.

Storage upgrades might require additional electrical service. Take into consideration the equipment nameplate ratings when addressing this concern. Consult your GVG representative.

Systems are designed to work with a single-phase (three-wire) power cord with a grounded neutral conductor. To reduce the risk of electric shock, always plug the cord into a powered off grounded power outlet.

Table 7 lists the power requirements for individual system components. Surge protectors and a UPS are recommended but are not supplied by GVG.

For best performance, keep all system power connections on the same power feed distribution panel. Do not connect any other equipment to the same outlet that is powering the DNP equipment.

Table 7. DNP System Power Requirements

Component	Voltage	Frequency	Power
DNP Server	120/240 VAC	50/60	300 Watts
Analog Breakout Box	N/A	N/A	N/A
D&A Breakout Box	120/240 VAC		1.5 Amps
17" Monitor (optional) Specifications based on a Viewsonic A70	100/240 VAC	50/60	2 Amps
Mackie 1402VLZ Pro (optional)	120/240 VAC	50/60	25 W
Fostex Speakers (optional)	120 VAC		5 W
Brocade Silkworm 2400 (optional 8 port)	100/240 VAC	50/60	1.5 Amps
Brocade Silkworm 2800 (optional 16 port)	100/240 VAC	50/60	1.5 Amps
Netgear FS516 Ethernet Switch (optional 16 port)	100/240 VAC	50/60	29 W

Synchronization Requirements

A stable video reference source is required for synchronizing the system only if playing that system directly to air. The system needs no reference as a stand-alone workstation or on a fibre channel network environment. The Pro Analog breakout box has reference In to the system on the front of the panel. The Pro Analog/Digital breakout box has reference IN on the back of the panel.



Environmental Requirements

Table 8 lists the environmental specifications for a standard broadcast environment. The air conditioning must maintain the operating temperature listed.

Table 8. *Environmental Specifications*

Condition	Range
Operating temperature	50 to 75 degrees Fahrenheit
Storage temperature	0 to 140 degrees Fahrenheit
Relative humidity	20% to 80%
Altitude	0 to 6000 ft (0 to 1829 m)

Networking Requirements

Grass Valley Group products are designed to work over industry-standard local area networks (LANs) and wide area networks (WANs), using standard TCP/IP networking protocols.

Install all possible network cabling before the equipment arrives. Make note of all the network IP addresses that will reside within workgroup.

Fibre Channel

The DNP system transfers the final story(s) to the playback server through a Fibre Channel switch connection. GVG recommends the Brocade Silkorm 2800 switch. Typically, fibre-optic cable is run along or inside a facilities ductwork using using 50 micron dual SC type termination connectors. GVG can recommend sources for custom or off-the-shelf length cables.

Ethernet Switch

The Ethernet hub or switch routes data between all DNP systems, the playout server and newsroom systems. Ethernet hubs have multiple RJ-45 connectors that connect all the network devices. A 100-BaseT Ethernet hub is required when connecting within GVG newsroom production workgroups. Typically, status LEDs on the hub shows valid connections or network activity.

Pin Assignments

The following section provides pin assignments for various connections to the DNP server.

VGA Monitor Port

The monitor port is a standard DB-15 pin female VGA connector for the 17" graphics monitor. Figure 9 and Table 9 show the pin-out configuration for the connector.

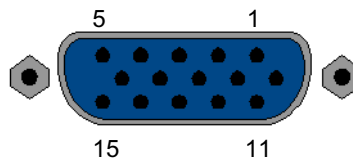


Figure 9. VGA Monitor Connector

Table 9. VGA Connector Pin Assignments

Pin	Signal
1	Red video
2	Green video
3	Blue video
4	GND
5	Display Data Channel GND
6	Red GND
7	Green GND
8	Blue GND
9	Not used
10	SYNC GND
11	GND
12	Serial Data



Table 9. *VGA Connector Pin Assignments*

Pin	Signal
13	Horizontal SYNC
14	Vertical SYNC
15	Serial Clock

Keyboard and Mouse Connectors

The DNP system provides two standard PS/2 style connectors. These connectors are used for the keyboard and mouse. Figure 10 and Table 10 show the pin-out for these 6-pin female connectors.

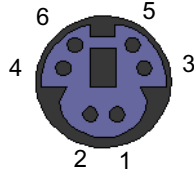


Figure 10. *PS/2 Connector*

Table 10. *PS/2 Connector Pin Assignments*

Keyboard/Mouse Pin	Signal
1	Data
2	NC
3	Ground
4	Plus 5 volts
5	Clock
6	Not used

RJ-45 Connectors

Category 5 unshielded twisted pair (UTP) cable supports up to 100 megabits per second. The cable contains four twisted pairs of wires, for a total of eight wires.

The four pairs of wires in UTP cable are color-coded so that they can be identified at each end of the cable. Typically, the pairs are made up of a solid color and the same color striped with white. The standard pin configuration for an 8-pin RJ-45 connector is shown in Figure 11.

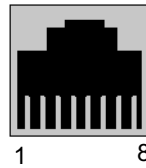


Figure 11. Category 5, RJ-45 Connector

Table 11. RJ-45 Connector Pin Assignments

Pin	Color Code
1	Orange/white stripe
2	Orange
3	Green/white stripe
4	Blue
5	Blue/white stripe
6	Green
7	Brown/white stripe
8	Brown



GPI Pin Assignments

There are 2 COM port connectors on the backplane of the DNP server. COM1 is located alongside the other motherboard connectors. COM2 is located in a slot position next to the video capture card(s). Both COM ports are generally used for the NewsQ application but can also be used with NewsEdit. See the User Manual for setting up the GPI Commands in relationship to the pins described in Table 12.

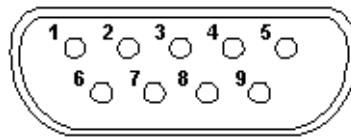


Figure 12. GPI DB-9 Connector

Table 12. GPI Pin Assignments

Pin	COM1 Function	COM2 Function
1	-	-
2	-	-
3	-	-
4	-	-
5	Chassis Ground	Chassis Ground
6	IN 2	IN 5
7	+12V	+12V
8	IN 1	IN 4
9	IN 3	IN 6

Provide +5 to +24 volts to an input to trigger.

For further information on third party products, please refer to the vendor's websites:

www.brocade.com

www.netgear.com

www.mackie.com

www.ati.com

www.fostex.com

www.microsoft.com

www.intel.com

